

## International Mathematical Olympiad

The International Mathematical Olympiad (IMO) is the premier international mathematics competition for high school students. The questions are unbelievably hard, but they didn't start out too bad. Here are the first two problems from the 1960 IMO.

1. Determine all three-digit numbers  $N$  having the property that  $N/11$  is equal to the sum of the squares of the digits of  $N$ .

2. For what values of the variable  $x$  does the following inequality hold:

$$\frac{4x^2}{(1 - \sqrt{2x+1})^2} < 2x + 9?$$